AMENDMENTS TO THE CLAIMS

1. (Original) An olefin polymerisation titanium catalyst comprising a titanium compound and an organoaluminium compound cocatalyst supported on a soluble polysulfone comprising free reactive sulfone groups, wherein the molar ratio of titanium to aluminium is 1-10 : 200 and the weight ratio of titanium to polysulfone is 0.01-0.1 : 0.3 – 2.5.

2. (Original) A catalyst as claimed in claim 1, wherein the polysulfone is of the formula 1:

$$X\text{-}(C_6H_4\text{-}4\text{-}SO_2C_6H_4\text{-}4\text{-}O\text{-}\ C_6H_4\text{-}4\text{-}SO_2\text{-}\ C_6H_4\text{-}4\text{-}O)_n\text{-}R_1$$

Formula 1

wherein X = Cl, R_1 = H or CH_3 and n = 25-50.

3. (Currently amended) A catalyst as claimed in claim 1 ~~or 2~~, wherein the olefin is ethylene.

4. (Currently amended) A catalyst as claimed in ~~any one of~~ claims 1 ~~to 3~~, wherein the titanium compound is titanium tetrachloride and/or titanium tetrabutoxide.

5. (Currently amended) A catalyst as claimed in ~~any one of~~ claims 1 ~~to 4~~, wherein the organoaluminium compound is methyl aluminoxane.

6. (Currently amended) A catalyst as claimed in ~~any one of~~ claims 1 ~~to 5~~, wherein the molar ratio of titanium to aluminium is 10:200.

7. (Currently amended) A catalyst as claimed in ~~any one of~~ claims 1 ~~to 6~~, wherein the weight ratio of the titanium to polysulfone is 0.04 : 0.3.

8. (Original) A process for the preparation of an olefin polymerisation titanium catalyst comprising a titanium compound and an organoaluminium compound cocatalyst supported on a soluble polysulfone comprising free reactive sulfone groups, wherein the molar ratio of titanium to aluminium is 1-10:200 and the weight ratio of titanium to polysulfone is 0.01-0.1 : 0.3 – 2.5, the process comprising:

a. preparing a supported titanium compound by contacting a solution of a polysulfone in a halogenated or polar solvent with a titanium compound or a solution thereof in a halogenated or polar solvent in an inert atmosphere at a temperature between 10^0C and the boiling point of the solvent, wherein the weight ratio of titanium to polysulfone is 0.01 – 0.1 : 0.3 – 2.5; and

b. mixing the supported titanium compound with an organoaluminium cocatalyst such that the molar ratio of titanium to aluminium is 1-10 : 200.

9. (Original) A process as claimed in claim 8, wherein the polysulfone is of the formula 1:

$$X\text{-}(C_6H_4\text{-}4\text{-}SO_2C_6H_4\text{-}4\text{-}O\text{-}C_6H_4\text{-}4\text{-}SO_2\text{-}C_6H_4\text{-}4\text{-}O)_n\text{-}R_1$$

Formula 1

wherein X = C1, R_1 = H or CH_3 and n = 25-50.

10. (Currently amended) A process as claimed in claim 8 ~~or 9~~, wherein the olefin is ethylene.

11. (Currently amended) A process as claimed in ~~any one of~~ claims 8 ~~to 10~~, wherein the titanium compound is titanium tetrachloride and/or titanium tetrabutoxide.

12. (Currently amended) A process as claimed in ~~any one of~~ claims 8 ~~to 11~~, wherein the organoaluminium compound is methyl aluminoxane.

13. (Currently amended) A process as claimed in ~~any one of~~ claims 8 ~~to 12~~, wherein the molar ratio of titanium to aluminium is 10:200.

14. (Currently amended) A process as claimed in ~~any one of~~ claims 8 ~~to 13~~, wherein the halogenated solvent is methylene chloride.

15. (Currently amended) A process as claimed in ~~any one of~~ claims 8 ~~to 13~~, wherein the polar solvent is dimethylformamide.

16. (Currently amended) A process as claimed in ~~any one of~~ claims 8 ~~to 15~~, wherein the inert atmosphere is provided by argon.

17. (Currently amended) A process as claimed in ~~any one of~~ claims 8 ~~to 16~~, wherein the supported titanium compound is prepared at 20 - 50^{0}C.

18. (Currently amended) A process as claimed in ~~any one of~~ claim 8 ~~9 to 17~~, wherein the weight ratio of the titanium to polysulfone is 0.04 : 0.3.

19. (Canceled) ~~A process for the preparation of an olefin polymerization titanium catalyst substantially as herein described particularly with reference to Examples 1 to 6.~~

20. (Currently amended) A process for the polymerization of an olefin with a titanium catalyst comprising a titanium compound and an organoaluminium compound cocatalyst supported on a soluble polysulfone comprising free reactive sulfone groups, wherein the molar ratio of titanium to aluminium is 1-10 : 200 and the weight ratio of titanium to

polysulfone is 0.01 : 0.3 – 2.5, the process comprises reacting the olefin with the titanium catalyst under polymerization conditions ~~in known manner~~.

21. (Original) A process as claimed in claim 20, wherein the polysulfone is of the formula 1:

$$X\text{-}(C_6H_4\text{-}4\text{-}SO_2C_6H_4\text{-}4\text{-}O\text{-}C_6H_4\text{-}4\text{-}SO_2\text{-}C_6H_4\text{-}4\text{-}O)_n\text{-}R_1$$

Formula 1

wherein X = Cl , R_1 = H or CH_3 and n = 25 - 30.

22. (Currently amended) A process as claimed in claim 20 ~~or 21~~, wherein the olefin is ethylene.

23. (Currently amended) A process as claimed in ~~any one of~~ claims 20 ~~to 22~~, wherein the titanium compound is titanium tetrachloride and/or titanium tetrabutoxide.

24. (Currently amended) A process as claimed in any one of claims 20 ~~to 23~~, wherein the organoaluminium compound is methyl aluminoxane.

25. (Currently amended) A process as claimed in ~~any one of~~ claims 20 ~~to 24~~, wherein the molar ratio of titanium to aluminium is 10 : 200.

26. (Currently amended) A process as claimed in ~~any one of~~ claims 20 ~~to 25~~, wherein the weight ratio of the titanium to polysulfone is 0.3 : 0.04.

27. (Canceled) ~~A process for the polymerization of an olefin with a titanium catalyst comprising a titanium compound and an organo aluminium compound cocatalyst supported on a soluble polysulfone comprising free reactive sulfone groups, wherein the molar ratio of titanium is 1 – 10 : 200 and the weight ratio of titanium to polysulfone is 0.01 – 0.1 : 0.3 – 2.5, substantially as herein described particularly with reference to Examples 7 to 10.~~

28. (New) A process as claimed in claim 9, wherein R_1 = CH_3, the halogenated or polar solvent comprises methylene dichloride, the titanium compound comprises titanium tetrachloride and the organoaluminium compound comprises methyl aluminoxane.

29. (New) A process as claimed in claim 9, wherein R_1 = H, the halogenated or polar solvent comprises methylene dichloride, the titanium compound comprises titanium tetrachloride and the organoaluminium compound comprises methyl aluminoxane.

30. (New) A process as claimed in claim 9, wherein R_1 = H, the halogenated or polar solvent comprises methylene dichloride, the titanium compound comprises titanium tetrabutoxide and the organoaluminium compound comprises methyl aluminoxane.

31. (New) A process as claimed in claim 9, wherein $R_1 = CH_3$, the halogenated or polar solvent comprises dimethyl formamide, the titanium compound comprises titanium tetrachloride and the organoaluminium compound comprises methyl aluminoxane.

32. (New) A process as claimed in claim 21, wherein $R_1 = CH_3$, the halogenated or polar solvent comprises methylene dichloride, the titanium compound comprises titanium tetrachloride and the organoaluminium compound comprises methyl aluminoxane.

33. (New) A process as claimed in claim 21, wherein $R_1 = H$, the halogenated or polar solvent comprises methylene dichloride, the titanium compound comprises titanium tetrachloride and the organoaluminium compound comprises methyl aluminoxane.

34. (New) A process as claimed in claim 21, wherein $R_1 = H$, the halogenated or polar solvent comprises methylene dichloride, the titanium compound comprises titanium tetrabutoxide and the organoaluminium compound comprises methyl aluminoxane.

35. (New) A process as claimed in claim 21, wherein $R_1 = CH_3$, the halogenated or polar solvent comprises dimethyl formamide, the titanium compound comprises titanium tetrachloride and the organoaluminium compound comprises methyl aluminoxane.